

THAT WHICH IS CLAIMED IS:

1. A molded floor covering for a vehicle floor, wherein the vehicle floor includes a drain hole formed therethrough, the molded floor covering comprising:

- 5 a thermoplastic polymer layer having a nonplanar three dimensional contoured configuration adapted to conform to a contour of the vehicle floor, and opposite first and second surfaces; and
- 10 an elongate tube extending outwardly from the thermoplastic polymer layer, including an open proximate end and an open distal end, a threaded cylindrical bore defining an axial direction and extending from the open proximate end to the open distal end, wherein the open proximate end is
- 15 integrally formed with the thermoplastic polymer layer, and wherein the elongate tube is configured such that the distal end thereof can extend through the vehicle floor drain hole.

2. A molded floor covering according to Claim 1 further comprising a drain plug including a head and a threaded shank connected to the head, wherein the threaded shank is configured to threadingly
- 5 engage the threaded cylindrical bore for moving the head of the drain plug along the axial direction toward and away from the proximate end when the drain plug is rotated about the axial direction in respective opposite directions.

3. A molded floor covering according to Claim 1 wherein the drain plug head has a conical frustum shape and wherein the proximate end has a corresponding conical frustum shape that is configured to receive the drain plug head in countersunk relation therewith.

4. A molded floor covering according to Claim 1 wherein the drain plug head comprises a tool engaging aperture for engagement with a tool for rotating the drain plug about the axial direction.

5. A molded floor covering according to Claim 1 further comprising a carpet having a fibrous surface disposed on the floor covering first surface.

6. A molded floor covering according to Claim 1 wherein the thermoplastic polymer layer is formed from an ethylene/vinyl acetate copolymer.

7. A molded floor covering for a vehicle floor, wherein the vehicle floor includes a drain hole formed therethrough, the molded floor covering comprising:

a thermoplastic polymer layer having a nonplanar three dimensional contoured configuration adapted to conform to a contour of the vehicle floor, and opposite first and second surfaces;

an elongate tube extending outwardly from the thermoplastic polymer layer second surface, including an open proximate end having a conical frustum shape and an open distal end, a threaded cylindrical bore

defining an axial direction and extending from the open proximate end to the open distal end, wherein the open proximate end is integrally formed with the thermoplastic polymer layer, and wherein the elongate tube is configured such that the distal end thereof can extend through the vehicle floor drain hole; and

a drain plug including a head and a threaded shank connected to the head, wherein the drain plug head has a conical frustum shape that is configured to be received by the proximate end in countersunk relation therewith, wherein the threaded shank is configured to threadingly engage the threaded cylindrical bore for moving the head of the drain plug along the axial direction toward and away from the proximate end when the drain plug is rotated about the axial direction in respective opposite directions.

8. A molded floor covering according to Claim 7 wherein the drain plug head comprises means for engaging a tool for rotating the drain plug about the axial direction.

9. A molded floor covering according to Claim 7 further comprising a carpet having a fibrous surface disposed on the floor covering first surface.

10. A molded floor covering according to Claim 7 wherein the thermoplastic polymer layer is formed from an ethylene/vinyl acetate copolymer.

11. A method of producing a molded floor covering for a vehicle floor, wherein the molded floor

covering includes a drain tube integrally formed
therewith, wherein the drain tube includes a threaded
5 bore that is configured to receive a correspondingly-
threaded plug, the method comprising the steps of:

providing a mold having a contour of the
vehicle floor and an outwardly projecting threaded
member, wherein the threaded member includes a head
10 portion and an elongate threaded shank;

vacuum forming a layer of thermoplastic
polymer over the mold and around the threaded member
such that the layer follows the contours of the mold
and threaded member to produce a molded floor covering
15 having opposite first and second surfaces, and a drain
tube extending outwardly therefrom, wherein the drain
tube includes a threaded bore with an open proximate
end and a closed distal end, wherein the open proximate
end is integrally formed with the molded floor
20 covering, and wherein the open proximate end has a
configuration of the head of the threaded member;

rotating the threaded member to threadingly
disengage the threaded member from the drain tube; and

forming an opening through the drain tube
25 distal end.

12. A method according to Claim 11 wherein
the threaded member head portion has a conical frustum
shape.

13. A method according to Claim 11 wherein
the thermoplastic polymer is an ethylene/vinyl acetate
copolymer.

14. A method according to Claim 11 further comprising the step of disposing a carpet having a fibrous surface on the first surface of the molded floor covering.

15. A method according to Claim 11 further comprising the step of disposing padding on the second surface of the molded floor covering.

16. A molded floor covering for a vehicle floor, wherein the vehicle floor includes an aperture formed therethrough, the molded floor covering comprising:

5 a thermoplastic polymer layer having a nonplanar three dimensional contoured configuration adapted to conform to a contour of the vehicle floor, and opposite first and second surfaces;

10 an elongate tube extending outwardly from the thermoplastic polymer layer second surface, including an open proximate end and an open distal end, a cylindrical bore defining an axial direction and extending from the open proximate end to the open distal end, wherein the open proximate end is
15 integrally formed with the thermoplastic polymer layer such that the cylindrical bore is in fluid communication with the aperture, and wherein the elongate tube is configured such that the distal end thereof can extend through the vehicle floor aperture;
20 and

a threaded insert disposed within the cylindrical bore.

17. A molded floor covering according to Claim 16 further comprising a drain plug including a head and a threaded shank connected to the head, wherein the threaded shank is configured to threadingly engage the threaded insert for moving the head of the drain plug along the axial direction toward and away from the elongate tube proximate end when the drain plug is rotated about the axial direction in respective opposite directions.

18. A molded floor covering according to Claim 16 wherein the drain plug head has a conical frustum shape and wherein the elongate tube proximate end has a corresponding conical frustum shape that is configured to receive the drain plug head in countersunk relation therewith.

19. A molded floor covering according to Claim 16 wherein the thermoplastic polymer layer is formed from an ethylene/vinyl acetate copolymer.

20. A molded floor covering for a vehicle floor, wherein the vehicle floor includes a drain hole formed therethrough, the molded floor covering comprising:

a thermoplastic polymer layer having a nonplanar three dimensional contoured configuration adapted to conform to a contour of the vehicle floor;
an elongate tube extending outwardly from the thermoplastic polymer layer second surface, including an open proximate end having a conical frustum shape and an open distal end, a cylindrical bore defining an

0993049, 110501

axial direction and extending from the open proximate
end to the open distal end, wherein the open proximate
end is integrally formed with the thermoplastic polymer
layer, and wherein the elongate tube is configured such
that the distal end thereof can extend through the
vehicle floor drain hole;

a cylindrical internally threaded insert
disposed within the cylindrical bore; and

a drain plug including a head and a threaded
shank connected to the head, wherein the drain plug
head has a conical frustum shape that is configured to
be received by the elongate tube proximate end in
countersunk relation therewith, wherein the threaded
shank is configured to threadingly engage the threaded
insert for moving the head of the drain plug along the
axial direction toward and away from the elongate tube
proximate end when the drain plug is rotated about the
axial direction in respective opposite directions.

21. A molded floor covering according to
Claim 20 wherein the thermoplastic polymer layer is
formed from an ethylene/vinyl acetate copolymer.

22. A method of producing a molded floor
covering for a vehicle floor, wherein the molded floor
covering includes a drain tube integrally formed
therewith, wherein the drain tube includes a bore that
is configured to receive a removable plug, the method
comprising the steps of:

providing a mold having a contour of the
vehicle floor and an outwardly projecting threaded
member, wherein the threaded member includes a head

10 portion, an elongate threaded shank, and a cylindrical
threaded insert threadingly engaged with the threaded
member along a portion of the elongate threaded shank;
vacuum forming a layer of thermoplastic
polymer over the mold and around the threaded member
15 and threaded insert such that the layer follows the
contours of the mold, threaded member and threaded
insert to produce a molded floor covering having
opposite first and second surfaces, and a drain tube
extending outwardly therefrom, wherein the drain tube
20 includes a bore with an open proximate end and a closed
distal end, wherein the open proximate end is
integrally formed with the molded floor covering,
wherein the threaded insert is integrally formed within
the cylindrical bore, and wherein the open proximate
25 end has a configuration of the head of the threaded
member;
rotating the threaded member to threadingly
disengage the threaded member from the threaded insert
within the drain tube; and
30 forming an opening through the drain tube
distal end.

23. A method according to Claim 22 wherein
the threaded member head portion has a conical frustum
shape.

24. A method according to Claim 22 wherein
the thermoplastic polymer is an ethylene/vinyl acetate
copolymer.

25. A method according to Claim 22 further

comprising the step of disposing a carpet having a fibrous surface on the first surface of the molded floor covering.

26. A method according to Claim 22 further comprising the step of disposing padding on the second surface of the molded floor covering.

27. A molded floor covering for a vehicle floor, wherein the vehicle floor includes an aperture formed therethrough, the molded floor covering comprising:

5 a thermoplastic polymer layer adapted to conform to a contour of the vehicle floor having opposite first and second surfaces;

an elongate tube extending outwardly from the thermoplastic polymer layer, including an open proximate end and a distal end, a cylindrical bore defining an axial direction and extending from the open proximate end to the distal end, wherein the open proximate end is integrally formed with the thermoplastic polymer layer, and wherein the elongate tube is configured such that the distal end thereof can extend through the vehicle floor aperture;

10

15

a cylindrical internally threaded insert disposed within the cylindrical bore; and

a fastener that compressively engages a portion of a mat disposed on the floor covering, comprising:

20

a head having a circumferentially extending shoulder that is configured to compressively engage a portion of the mat

25

disposed on the floor covering; and

30

a threaded shank connected to the head,
wherein the threaded shank is configured to
threadingly engage the threaded cylindrical
bore for moving the head of the fastener
along the axial direction toward and away
from the proximate end when the fastener is
rotated about the axial direction in
respective opposite directions.

5

28. A molded floor covering according to
Claim 27 wherein the fastener comprises a neck portion
between the head and the threaded shank that has a
conical frustum shape and wherein the proximate end of
the elongate tube has a corresponding conical frustum
shape that is configured to receive the neck portion in
countersunk relation therewith.

29. A molded floor covering according to
Claim 27 wherein the fastener head comprises a tool
engaging aperture for engagement with a tool for
rotating the drain plug about the axial direction.

30. A molded floor covering according to
Claim 27 wherein the fastener head comprises a portion
configured to be grasped by a user for manually
rotating the drain plug about the axial direction.

31. A molded floor covering according to
Claim 27 wherein the thermoplastic polymer layer is
formed from an ethylene/vinyl acetate copolymer.

32. A method of producing a molded floor covering for a vehicle floor, wherein the molded floor covering includes an elongate tube integrally formed therewith, wherein the elongate tube includes a bore that is configured to receive a removable fastener, the method comprising the steps of:

providing a mold having a contour of the vehicle floor and an outwardly projecting threaded member, wherein the threaded member includes a head portion, an elongate threaded shank, and a neck portion between the head portion and threaded shank, and a cylindrical internally threaded insert threadingly engaged with the threaded member along a portion of the elongate threaded shank;

vacuum forming a layer of thermoplastic polymer over the mold and around the threaded member and threaded insert such that the layer follows the contours of the mold, threaded member and threaded insert to produce a molded floor covering having an elongate tube extending outwardly therefrom, wherein the elongate tube includes a bore with an open proximate end and a distal end, wherein the open proximate end is integrally formed with the molded floor covering, wherein the threaded insert is integrally formed within the cylindrical bore, and wherein the proximate end has a configuration of the neck portion of the threaded member; and

rotating the threaded member to threadingly disengage the threaded member from the threaded insert within the elongate tube.

33. A method according to Claim 32 wherein

the threaded member neck portion has a conical frustum shape.

34. A method according to Claim 32 wherein the thermoplastic polymer is an ethylene/vinyl acetate copolymer.

TOP SECRET